Microbiological Sampling Report

for

National Oceanic & Atmospheric Administration

Samplings Conducted at the Fitness Center of Building SSMC-3
on November 9, 1999

Interagency Agreement #: D8H00CO31200
Task: 9903

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Prepared by

US Public Health Service

Division of Federal Occupational Health

Bethesda Central Office

Executive Summary

At the request of the National Oceanic & Atmospheric Administration (NOAA), Federal Occupational Health (FOH) performed visual inspection and microbiological sampling at the Fitness Center of Building SSMC-3, located at 1315 East-West Highway, Silver Spring, Maryland. Surface swab samples were collected from the unused shower stall of men's locker room in the Fitness Center on November 9, 1999. The objective of this sampling was to identify the mold growth for developing the decontamination project. Swab samples were also collected from other areas of the Fitness Center for comparison.

The bases of the "out of order" shower stall were covered with fitted green boards. The green board on the left side was removed and visible black mold growth was observed. Swab samples were collected from these areas for identification of causative fungi. Microscopic examination of these samples indicated that *Stachybotrys chartarum* dominated these samples. Direct plating of the swab on agar plates confirmed the aforementioned results. Remediation of these areas according to the New York City Department of Health Guideline is recommended.

Stachybotrys chartarum was also detected from one of two samples collected from a shower stall in Women's locker room. Further investigation is recommended.

INTRODUCTION

At the request of the National Oceanic & Atmospheric Administration (NOAA), Federal Occupational Health (FOH) performed visual inspection and microbiological sampling at the Fitness Center of Building SSMC-3, located at 1315 East-West Highway, Silver Spring, Maryland. Surface swab samples were collected from the unused shower stall of men's locker room in the Fitness Center on November 9, 1999. The objective of this sampling was to identify the mold growth for developing the specification for decontamination. Other swab samples were also collected from Women's locker room and other areas.

EVALUATION METHODOLOGY

Upon arrival of the Men's locker room, field personnel observed an "out of order" sign taped at the entrance of the shower stall next to the farthest right. The tiles at the base of this shower stall had been removed. Fitted green boards were screwed at the three sides of the base. The green board on the left side was unscrewed and removed for observation and sampling. Visible black fungal growth was observed. Swab samples were collected by wiping the visible growth area with a sterile cotton swab (Culturette$^{\hat{a}}$) wetted with holding media. The swab was then placed directly into its holder. Each holder was labeled with an identifiable number. A total of three swabs were collected from this shower stall. One other swab sample was collected from the base of the cracked wall facing the shower stalls. Another two swab samples were collected from Women's shower stalls: one from the vertical surface on caulking and the other from a cracked tile at the base of a shower stall. These samples were delivered to FOH's Environmental Microbiology Laboratory in Philadelphia, Pennsylvania. In the laboratory, each swab collected from Men's shower stall was wiped on a microscopic slide, stained, and examinated under a compound microscope. Then the swab was streaking on two agar plates: one with 2% malt extract agar (MEA) and the other with cellulose Czapek agar (CCA). All other swabs were directly streaking on MEA and CCA plates. Plates were incubated at 25°C for 10 days. They were examined every other day for up to 10 days to ensure the full recovery of fungi. Fungal colonies formed on each MEA plate and presence of *Stachybotrys chartarum* on each CCA plate were recorded. Fungal identification is based on colony morphology, spore and conidia formation.

RESULTS and DISCUSSION

Results from these sampling are presented in a laboratory report NOAA-00-9R (Attachment A). All three samples collected from men's shower stall showed presence of *Stachybotrys chartarum*. Other fungal species such as *Alternaria, Aspergillus versicolor, Aspergillus species,* and yeast were also detected. *Stachybotrys chartarum* was not detected from the other sample collected from Men' locker room.

Stachybotrys chartarum was detected from the sample collected from the base of a shower stall in Women's locker room.

CONCLUSIONS

Stachybotrys chartarum was detected from three samples collected from the visible fungal growth areas behind the green board of the "out of order" shower stall in Men's locker room. This fungus was also detected from one sample collected from the base of the shower stall in Women's locker room.

RECOMMENDATIONS

· Immediately seal the green board areas in the "out of order" shower stall of Men's locker room and the cracked tiles of Women's shower stall to prevent any release of spores.

· Prevent any disturbance of areas where spores of *Stachybotrys chartarum* were detected.

· Remediate the “out of order” shower stall in Men’s locker room under containment with negative air pressure according to the New York City Department of Health Guideline for *Stachybotrys atra* (Attachment B).

· Take actions for the remaining shower stalls in Men’s locker room as follows:

(1) Assuming gypsum boards behind the ceramic tiles of all shower stalls are contaminated, remediate all shower stalls in Men’s locker room.

(2) Perform further comprehensive investigation in the remaining shower stalls, especially behind the ceramic tiles, to determine whether these areas are *Stachybotrys chartarum*-contaminated.

· Consult with a professional engineer, who is familiar with the Heating Ventilation and Air-conditioning systems of this building, for the remediation project.

· Further investigation of shower stalls in Women’s locker room is recommended.

ATTACHMENT A

Microbiological Laboratory Report

NOAA-00-9R

ATTACHMENT B

Guidelines on Assessment and Remediation

of *Stachybotrys atra* in Indoor Environments

USPHS DFOH ENVIRONMENTAL MICROBIOLOGY LABORATORY

PHILADELPHIA, PA

LABORATORY REPORT # NOAA-00-9R

Client agency: National Oceanic and Atmospheric Administration, Silver Spring, MD

POIS#/task #: D8H00CO31200 / 99-03

Sampling date: 11/9/99

Date of Inoculation: 11/12/99

General location: SSMC-3, Silver Spring, MD

Specific location: M2 level, Fitness Center

Sampling technique: Wipe samplings

Samples submitted by: L. Hung and J. Sobelman

Date characterization completed: 11/22/99

(A) Direct Microscopic Examination of Wipe Samples

Sample ID	Sample Location	Identification
3-FC-1109W01	**Men's locker room, "out of order" shower stall, behind the replaced green board on the left sidewall, wipe on the black visible mold growth area**	**Hyphae, conidiophores, and conidia (spores) of *Stachybotrys chartarum* dominated the sample**
3-FC-1109W02	**Men's locker room, "out of order" shower stall, behind the replaced green board on the left sidewall, wipe on the black visible mold growth area**	**Hyphae, conidiophores, and conidia (spores) of *Stachybotrys chartarum* dominated the sample**
3-FC-1109W03	**Men's locker room, "out of order" shower stall, behind the replaced green board on the left sidewall, wipe on the black visible mold growth area**	**Hyphae, conidiophores, and conidia (spores) of *Stachybotrys chartarum* dominated the sample**

(B) Wipe samples on MEA and CCA plates by direct streaking

Sample ID	Sampling Location	Fungi detected on MEA @ 25°C	Presence of *Stachybotrys chartarum**** on CCA @ 25°C
3-FC-1109W01	**Men's locker room, "out of order" shower stall, behind the replaced green board on the left sidewall, wipe on the black visible mold growth area**	1. *Aspergillus sp.* # 2. *Aspergillus versicolor**** 3. *Stachybotrys chartarum**** 4. yeast	Yes

Sample ID	Sampling Location	Fungi detected on MEA @ 25°C	Presence of *Stachybotrys chartarum**** on CCA @ 25°C

3-FC-1109W02	**Men's locker room, "out of order" shower stall, behind the replaced green board on the left sidewall, wipe on the black visible mold growth area**	1. *Aspergillus versicolor**** [#] 2. *Stachybotrys chartarum**** 3. yeast	Yes
3-FC-1109W03	**Men's locker room, "out of order" shower stall, behind the replaced green board on the left sidewall, wipe on the black visible mold growth area**	1. *Alternaria* [#] 2. *Aspergillus versicolor**** 3. *Stachybotrys chartarum**** 4. yeast	Yes
3-FC-1109W04	Women's shower vertical on caulking	1. Ascomycetes [#] 2. *Fusarium* 3. *Paecilomyces*	No
3-FC-1109W05	Women's shower, underneath the crack at bottom on left	1. *Aspergillus sp.* [#] 2. *Paecilomyces* 3. *Penicillium* 4. yeast	Yes
3-FC-1109W06	Men's locker room, cracked wall facing shower stall	1. *Aspergillus sp.* [#] 2. *Aspergillus versicolor**** 3. *Aureobasidium* 4. *Paecilomyces* 5. *Penicillium*	No

[#] Fungi presented in alphabetical order.

*** Toxigenic fungi.

Characterization completed by: _____

Ling-Ling Hung, Ph.D. Microbiologist

Quality control checked by: _____ (initials)